

### ABSTRACT OF THE DISCLOSURE

An armature for a brush commutated electric motor having a distributed coil winding arrangement for reducing brush arcing and electro-magnetic interference (EMI). The winding pattern involves segmenting each coil into first and second subcoil portions with differing pluralities of turns. Each subcoil portion is wound around separate pairs of spaced apart slots of a lamination stack. Adjacent coils are wound such that one subcoil portion of each is wound in a common slot to therefore form an overlapping arrangement of each pair of adjacently coils. The winding pattern serves to "shift" the resultant magnetic axes of each coil in such a manner so as to significantly reduce brush arcing and the EMI resulting therefrom. The reduction in EMI is sufficient to eliminate the need for EMI reducing components, such as chokes, which have typically been required to maintain EMI to acceptably low levels. Commutation efficiency is also improved by the distributed winding pattern described above because of the reduction in the unevenness of the magnetic coupling between adjacent coils.